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FEDERAL COMMUNICATIONS COMMISSION
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BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of)
)
Allocation of Spectrum Below) ET Docket No. 94-32
5 GHz Transferred From Federal)
Government Use)

To: The Commission

COMMENTS OF METRICOM, INC.

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longer invest their money and time developing new Part 15 applications because the Commission appears to have lost interest in unlicensed operations.^{2/}

Because of the Commission's prior findings of fact, and its well established policies of protecting and encouraging unlicensed Part 15 operations, the reallocation of the 2402-2417 MHz band by the Commission to another licensed service would be unlawful. Consistent with its findings of fact and existing policies relating to unlicensed operations, the Commission should retain the band for the exclusive use of those services already authorized to operate there; the Commission cannot remove unlicensed Part 15 devices from the band. In addition, consistent with the Omnibus Budget Reconciliation Act, and because of the market success and importance of unlicensed Part 15 devices, the Commission should consider enhancing the Part 15 Rules to facilitate the more rapid development and proliferation of Part 15 equipment operating in this band. Accordingly, the Commission must retain the 2402-2417 MHz band for unlicensed operations. Because the operation of licensed services and auctions are antithetical to both the operation and the notion of unlicensed shared services, Metricom opposes the placement of licensed services in the band, and opposes any auctions for this particular spectrum which is designed for shared operations.

^{2/} This is especially true in light of the Commission's proposal to authorize additional, exclusive licensed services in the 902-928 MHz band which is currently used extensively by Part 15. See, Automatic Vehicle Monitoring (Notice of Proposed Rule Making, PR Dkt. No. 93-61).

II. BACKGROUND

1. Metricom is a young, rapidly growing, technologically innovative company based in Silicon Valley. In accordance with the encouragement of the Commission in its various Part 15 proceedings, Metricom has invested significant sums of money, time and energy to develop, manufacture and market sophisticated radio frequency transmitter and receiver systems which operate pursuant to the Part 15 spread spectrum Rules. Through the application of innovative technology, as encouraged by the Commission, Metricom's Part 15 devices offer a unique license-free wireless solution providing cost-effective, intelligent and flexible local and wide area data communications for a variety of applications.

2. The Notice results directly from a 1993 amendment to the National Telecommunications and Information Administration Organization Act.^{3/} That amendment gave the Federal government until August 10, 1994 to abandon 50 MHz of spectrum which was allocated for Federal government use, and it instructed the Secretary of Commerce to decide what bands the government would abandon.^{4/} The law also requires the Commission to allocate this 50 MHz of bandwidth by February 10, 1995.^{5/} In response to that law, the Secretary ordered Federal users to abandon the 2402-2417 MHz band, as well as the 2390-2400 MHz and 4660-4685 MHz bands,

^{3/} See Omnibus Budget Reconciliation Act of 1993 § 6001, codified at 47 U.S.C.A. § 921 et seq. (1994 supp.).

^{4/} Id., 47 U.S.C.A. § 923.

^{5/} Id., 47 U.S.C.A. § 925(a).

effective August 10, 1994. The Commission has issued the present Notice seeking comments on proposals to allocate these bands for non-government use.

3. In its Notice, the Commission has proposed to allocate the 2402-2417 MHz band in one of three ways, namely: (1) eliminate this band from Part 15 use in order to avoid conflicts with future licensed services; (2) introduce licensed services in the band in addition to the unlicensed uses; (3) maintain Part 15 operations in the band while limiting licensed use in the band.^{6/}

III. DISCUSSION

A. It Would Be Unlawful for the Commission to Allocate the 2402-2417 MHz Band to Another Licensed Communications Service

1. Prior Commission Findings of Fact and Stated Policies Make It Unlawful for the Agency to Allocate the Band for Use by Another Licensed Service

4. A decision that would allow the provision of an incompatible licensed communications service in the 2402-2417 MHz band, or that removes unlicensed operations from the band, would violate Section 706 of the Administrative Procedure Act ("APA").^{7/} Under that provision, a Commission policy, including a spectrum allocation decision, is invalid if, as here, it is inconsistent with the agency's prior findings of fact and stated policies.^{8/}

^{6/} Notice at ¶18.

^{7/} 5 U.S.C. § 706.

^{8/} See WLOS TV, Inc. v. FCC, 932 F.2d 993 (D.C. Cir. 1991); Office of Communication of the Church of Christ v. FCC, 560 F.2d (continued...)

a. Prior Commission Findings and Policies

5. The Commission's findings, policies and experience with Part 15 unlicensed operations illustrate that the 2402-2417 MHz band must be maintained for unlicensed operations.^{2/} The best argument for maintaining the 2402-2417 MHz band for Part 15 operations comes from the Commission itself. In its Report to the Secretary of Commerce regarding NTIA's Preliminary Spectrum Reallocation Report,^{10/} the Commission stated:

In 1990, we encouraged development of advanced spread spectrum devices in the 902-928 Mhz ... bands. Today there are literally millions of Part 15 devices operating in the 902-928 MHz band, including cordless phones, wireless alarm systems, computer local area networks, automated meter reading systems, anti-shop-lifting systems, inventory control systems, and automatic vehicle identification systems. Although the 2400-2483.5 MHz band is not as heavily used as the 902-928 MHz band, there has recently been substantial development of, and investment in, equipment using this band. . . . It is unlikely that a licensed service would be able to share this band with these

^{8/} (...continued)
529 (2d Cir. 1977); Greater Boston Television Corp. v. FCC, 444 F.2d 841, 852 (D.C. Cir.), cert denied, 403 U.S. 923 (1971).

^{2/} Part 15 unlicensed operations are authorized in the 2400-2483.5 MHz band. The Rules require devices in that band to employ spread spectrum techniques. For frequency hopping systems, a minimum of 75 hopping frequencies is required, and a maximum bandwidth of 1 MHz per channel (which is required for high data rate applications) is allowed. Therefore, 75 MHz of spectrum is necessary for these types of operations. See Section 15.247(a)(1)(ii). Accordingly, any reduction of bandwidth within the band creates a de facto modification of the Part 15 rules. Such a modification without notice and an opportunity to comment violates the APA.

^{10/} Report to Ronald H. Brown, Secretary, U.S. Dept. of Commerce, Regarding the Preliminary Spectrum Reallocation Report (Rel. August 9, 1994).

devices, which can operate with up to one watt of transmitter power under Part 15 of our Rules.⁷⁶ Accordingly, reallocation of this band would jeopardize the significant private sector investment already made in developing new technologies operating under Part 15.

⁷⁶ In the Preliminary Report, NTIA states that the shared use of the 902-928 MHz band between Federal Government systems and a wide-array of non-Government systems suggests that there is very efficient use of this band and it concludes that the large number of existing non-Federal incumbents eliminates the band for consideration from reallocation. Preliminary Report at 4-9. We expect that the situation with respect to the 2402-2417 MHz band would become very similar even though we have not yet seen the high level of use in this band as in the 902-928 MHz band.^{11/}

6. The Commission's position in its Report to Commerce is based on earlier Commission pronouncements. In its overall frequency allocation policies to promote the more effective and efficient uses of radio in the public interest,^{12/} the Commission has recognized the importance of, and encouraged, Part 15 operations.^{13/} Recently, in adopting rules to facilitate greater

^{11/} FCC Report to Ronald H. Brown, Secretary, U.S. Department of Commerce, Regarding the Preliminary Spectrum Reallocation Report, FCC 94-213 (Rel. Aug. 9, 1994) at ¶ 39 (Emphasis added).

^{12/} The Commission has noted that Part 15 spread spectrum equipment operating in the 2402-2417 MHz band uses "transmission schemes that are extremely robust and versatile." Notice, Paragraph 18.

^{13/} The Commission stated that:

our attempt to encourage this [Part 15] development have been successful and today millions of Part 15 spread spectrum devices provide a
(continued...)

flexibility in the design and use of low power, non-licensed spread spectrum systems (which are employed in the 2402-2417 MHz band), the Commission stated: "The new rules will significantly increase the potential range of permissible designs for Part 15 spread spectrum systems and thereby broaden the opportunities for development and use of this important new technology."^{14/} The Commission believed that making spectrum available for unlicensed, Part 15 operations would "provide major benefits to both manufacturers and consumers" and create an opportunity for "many new practical uses."^{15/} Because the Commission believed that Part 15 spread spectrum technologies offered important new opportunities for developing communications capabilities, the Commission stated:

We desire to encourage the development and implementation of this exciting new family of technologies, and therefore seek to provide a regulatory framework in which there is maximum

^{13/} (...continued)

wide variety of communications services Although the majority of Part 15 spread spectrum devices operate in the 902-928 MHz band ... considerable investment has been made in developing equipment to operate in the 2400-2483.5 band.

FCC Report to Ronald H. Brown, Secretary, U.S. Dept. of Commerce, supra, at Paragraph 13 (citations omitted).

^{14/} Amendment of Parts 2 and 15 of the Rules With Regard to the Operation of Spread Spectrum Systems, (Report and Order) 8 FCC Rcd 4123 (1990) at Paragraph 1.

^{15/} Revision of Part 15 (Notice of Proposed Rule Making), 2 FCC Rcd 6135, 6137 (1987); Revision of Part 15 (First Report and Order), 66 R.R. 2d 295, 308 (1989).

flexibility for the use of spread spectrum systems^{16/}

7. At Paragraph 9 of the Notice in this proceeding, the Commission indicates what it is attempting to achieve through the allocation process: a "flexible" allocation that relies substantially on "market forces," with a market structure that provides for competition in the provision of new services which would promote economical prices for users and provide operators with incentives to develop and introduce innovative services, features and technologies.^{17/} It is a demonstrated fact that unlicensed Part 15 operations precisely fit this description of the Commission's ideal.

8. Not only did the Commission find just four months ago, as noted above, that licensed communications services cannot reasonably share this band with Part 15 operations, it also held that it would not make any allocation decision that would hamper development of Part 15 equipment designed to operate on this band:

The benefits of providing short-range communications via unlicensed low power devices is generally recognized, and interest in such devices is growing. Recently there have been

^{16/} Amendment of Parts 2 and 15, supra, at Paragraph 8. It must be noted that while the Commission has allocated additional spectrum for limited unlicensed operations -- Unlicensed PCS -- Memorandum, Opinion and Order, Gen Dkt. No. 90-314, 9 FCC Rcd 1309 (1994), the spectrum etiquette adopted for that band: (i) does not permit spread spectrum operations; and, (ii) does not permit sufficient transmitter power for other than very short range indoor communications. In addition, because of the complex band-clearing process, the Unlicensed PCS allocations are not expected to become available in the near future.

^{17/} Notice, Paragraph 9.

dramatic developments in such equipment such that it now can provide a wide and versatile array of services including cordless phone, wireless local area networks, wireless PBX, point-to-point communications, inventory tracking systems, and IVHS-related systems.^{18/}

* * * *

Considering the existing non-Government use of the 2402-2417 MHz band by the Amateur service, ISM equipment, and Part 15 devices, and the limited possibility for implementing a licensed commercial service in the band, we believe that the reallocation of this band will provide very little additional value to the public. Any future changes to this band could jeopardize significant private sector investments already made in this band and could result in a loss of benefits to the public and the Federal Government.^{19/}

9. Finally, it is important to note that while the Commission solicited suggestions for specific communication services that could share the band with co-channel Part 15 devices in an earlier Notice of Inquiry in this proceeding, it received none. Accordingly, removing Part 15 unlicensed operations from the 2402-2417 MHz band, or placing an incompatible licensed service in the band, would be devastating to innovation and investment in unlicensed

^{18/} FCC Report to Ronald H. Brown, Secretary, U.S. Department of Commerce, supra, at ¶ 50.

^{19/} Id. at Paragraph 51. The NTIA Administrator recently stated that the "critical importance of [unlicensed Part 15] wireless systems to the future development of the National Information Infrastructure (NII) is well recognized and supported," and that the availability of unlicensed bands provides "significant opportunities for innovators and small companies to make contributions to the overall mix of products and services available through the NII." Letter from Larry Irving, NTIA Administrator, to Reed Hundt, Chairman FCC (Dec. 12, 1994) relating to, inter alia, PR Dkt. No. 93-61, at 1 (the "Irving Letter").

products providing innovative, cost-effective services that have been proven in the marketplace. Additionally, it would violate the APA and, therefore, would not withstand judicial scrutiny.

2. Allocating the Band to the New Fixed and Mobile Service Described by the Commission Would Be Inconsistent With the Agency's Legal Duty to Establish Discrete Classes of Communications Service

10. Allocation of the band to the only specific service that the agency suggests -- a new "Fixed and Mobile Service"^{20/} -- would also violate Section 303 of the Communications Act. That statutory provision requires the Commission to "[c]lassify radio stations . . . [into different classes, p]rescribe the nature of the service to be rendered by each class . . . [and a]ssign bands of frequencies to the various classes" The provision was designed specifically to ensure that any service provided by a licensee benefits the public interest rather than the licensee alone.^{21/}

11. The allocation of 2402-2417 MHz to a new Fixed and Mobile Service would be an abdication of the agency's responsibility to determine service classes rather than a reasonable exercise of discretion under Section 303 because every conceivable service is included in the class of Fixed and Mobile Service. While the

^{20/} See Notice at Paragraphs 8-9, 19.

^{21/} See, e.g., NBC v. U.S., 319 U.S. 190 (1943); Fed. Radio Commission v. Nelson Bros. Bond & Mortgage Co., 289 U.S. 266 (1933).

agency has considerable discretion to define classes,^{22/} it obviously does not have authority to exercise this discretion by allocating spectrum to a service classification that covers every conceivable communications service since the duty to classify services then would be meaningless.

12. Congress has warned the Commission to take Section 303 seriously. For example, in 1985 the Senate Committee on Commerce, Science and Transportation informed the agency that its plan to allocate 24 megahertz of spectrum to a new service called "General Purpose Mobile Service" was unlawful:

"The Commission's proposal . . . that applicants for different services, such as the private land mobile service and the cellular radio service, compete for the same spectrum . . . is not authorized by law. The Communications Act requires the Commission to award spectrum by making discreet allocations of spectrum to each service as the public interest requires."^{23/}

As a result, the Commission abandoned its plan and instead allocated specific parts of that spectrum to discrete services.^{24/}

^{22/} See FCC v. WNCN Listeners Guild, 450 U.S. 582, 594 (1980) and cases cited therein.

^{23/} S. Rep. No. 301, 99th Cong. 2d Sess. 34 (May 15, 1986).

^{24/} Report and Order in GEN Dkt. Nos. 84-1231, 84-1233 and 84-1234, 2 FCC Rcd. 1825 (1986) recon. denied, 2 FCC Rcd. 6830 (1987) (allocating parts of that band to the Cellular Service and other parts of the band to the Public Land Mobile Service); Amendment of the Commission's Rules Relating to Alloc. of the 849-851/894-896 MHz Band, 5 FCC Rcd. 3861 (1990), recon. 6 FCC Rcd. 4582 (1991) (allocating another part of that band to the Air-Ground Radiotelephone Service); and Amendment of the Commission's Rules to Establish New Narrowband Personal Communications Services, 8 FCC Rcd. 7162 (1993) (allocating another part of that band to a new Narrowband Personal Communications Service).

13. Congress recently reaffirmed its insistence that the Commission take seriously its responsibility under Section 303. In authorizing the agency to grant certain licenses by auction, it simultaneously amended the Communications Act to make clear that this auction authority does not replace the Commission's Section 303 obligation to allocate spectrum to discrete categories of service that meet the public interest:

"Nothing in this subsection [authorizing grant of licenses by auction] . . . shall . . . alter spectrum allocation criteria . . . established by the other provisions of this Act."^{25/}

14. While the Commission claims that its First Report and Order in ET Dkt. No. 92-9 could serve as precedent for allocating the present bands to a new service category that would encompass any conceivable use,^{26/} it is wrong. In that order, the Commission held only that the subject bands would be allocated in the future to discrete services:

"[W]e are allocating . . . [these] bands for the development and implementation of emerging technologies . . . The use of these . . . [bands] will be developed in ongoing and future proceedings that will address particular emerging technology services."^{27/}

^{25/} 47 U.S.C. § 309(j)(6), added to the Commun. Act by the Omnibus Budget Reconciliation Act of 1993, supra, at § 6002(a).

^{26/} Notice at ¶8.

^{27/} 7 FCC Rcd. 6886, 6890 (1992). In subsequent orders, the Commission has allocated most of the "emerging technology" bands to discrete services. See Amendment of the Commission's Rules to Establish New Personal Communications Services, 8 FCC Rcd. 7700 (1993), modified 75 Rad. Reg. 2d (P&F) 491 (1994) (allocating portions of these bands to licensed PCS, unlicensed asynchronous PCS and unlicensed isochronous PCS). The remaining parts of these
(continued...)

By contrast, the Commission proposed in its present Notice to allocate the 2402-2417 megahertz band to an open-ended service category rather than reserve the band for future allocation to one or more discrete services.

B. Rather Than Allocating the 2402-2417 MHz Band to Another Licensed Service, the Commission Should Amend Its Part 15 Rules In Order to Further Stimulate Development of Innovative Part 15 Equipment

15. Rather than allocate the 2402-2417 MHz band to a new licensed service, thereby harming the public by effectively removing the band from use by Part 15 equipment and creating a severe chilling effect for all unlicensed services, the Commission should amend existing Part 15 Rules to promote even more rapid development of Part 15 equipment capable of operating in this band.^{28/} This can be accomplished by amending existing rules to give Part 15 devices "primary user" status as against any use authorized in the future. The Commission can do this by amending Section 15.5 in order to state that any communications service authorized in the future to use this band shall be prohibited from causing interference to any co-channel Part 15 device, and shall be

^{27/} (...continued)

bands are unallocated and thus unavailable for use in providing any communications service at present.

^{28/} The Omnibus Budget Reconciliation Act, supra, plainly gives the Commission authority to allocate the band to a service (like Part 15 transmitters) already operating there rather than requiring the agency to allocate the band to a new use. Thus, 47 U.S.C.A. § 923(a)(3) requires only that the Secretary of Commerce identify spectrum that "can feasibly be made available . . . for use under the 1934 Act." And 47 U.S.C.A. § 925(a) requires only that the Commission "adopt regulations to allocate such frequencies" by February 10, 1995.

required to accept interference caused by operation of any Part 15 device. Such action would be consistent with the NTIA Administrator's urging the Commission "to provide a long term, stable regulatory environment for ... nonlicensed users."^{29/}

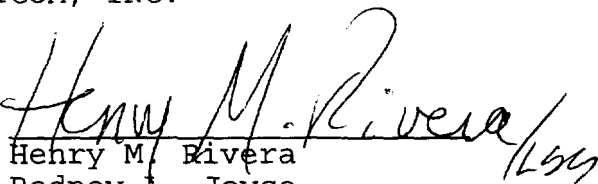
IV. CONCLUSION

16. Rather than allowing 2402-2417 MHz to be used by another licensed communications service, the Commission instead should amend its regulations in certain specific ways to increase usefulness of the band for the unlicensed Part 15 transmitters already allowed to operate there. Such action would be consistent with Commission findings and policies encouraging the development and proliferation of Part 15 unlicensed equipment, and would serve the public interest by making available highly desirable, cost-effective, and easily deployable equipment and services.

Respectfully submitted,

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^{29/} Irving Letter at 3.